Official Draft Public Notice Version **July 5, 2016**
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FACT SHEET STATEMENT OF BASIS
UTAH AMERICAN ENERGY, LILA CANYON MINE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0026042
NEW MINOR INDUSTRIAL

FACILITY CONTACTS

Facility Contact:	Karin Madsen	Responsible Official:	David Hibbs
Position:	Engineering Tech.	Position:	President & CEO
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DESCRIPTION OF FACILITY

Facility Name:	Utah American Energy, Lila Canyon Mine
Mailing Address:	P.O. Box 910 East Carbon, Utah 84520
Physical Location:	23415 N. Lila Canyon Road Green River, Utah 84525
Coordinates:	Latitude: 39°25'26.97", Longitude: 110°20'55.24".
Standard Industrial Classification (SIC):	*1222 - Bituminous Coal Underground Mining (NAICS 212112)*

Utah American Energy, Lila Canyon Mine is an active underground coal mining facility located in Lila Canyon, and discharges to a tributary to the Price River. Lila Canyon Mine was previously covered under the Coal Mining General Permit UTG040024, but upon issuance of this permit, coverage under the General Permit will cease. Utah American Energy requested issuance of an individual permit because it anticipates higher TDS water and intersecting flooded mine works which will require dewatering, causing an exceedance of the one ton per day requirement of the general coal permit. Anticipated flows are indicated at 3.0 MGD for 2-6 months, after which time flows will decrease to a lower sustained flow. A portion of the mine water will be treated by reverse osmosis used in an onsite bath house. Lila Canyon has another individual UPDES permit for its sanitary sewage and grey water system, Permit No. UT0026018. Lila Canyon intends to divert flows from the mine portal though a new ditch system. The flow will then be piped under an existing storm water detention pond and then discharged into Lila Canyon.

DESCRIPTION OF DISCHARGE

Outfall	Description
002	Sedimentation pond discharge into Grassy Wash.
003	Mine portal water discharge South East of Sediment Pond #1 into Grassy Wash.

RECEIVING WATERS AND STREAM CLASSIFICATION

As a tributary to Price River, discharges to Lila Canyon Wash are subject to regulation under the Utah Pollution Discharge Elimination System (UPDES). The Price River is estimated to be between six and ten miles downstream of Lila Canyon Wash. Per *Utah Administrative Code (UAC) R317-2-13.*1b, the beneficial uses for the Price River and tributaries, from confluence with the Green River to Carbon Canal Diversion at Price City Golf Course are 2B, 3C and 4.

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

Class 3C -- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitation guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no underlying standards have been developed, Best Professional Judgment (BPJ) may be used where applicable to set effluent limits. "Best Professional Judgment" refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

1) Utah American Energy's discharge meets the EPA definition of "alkaline mine drainage." As such, it is subject to the technology based effluent limitations in *40 CFR Part 434.45*. Technology based limits used in the permit are listed below.

    a. Total suspended solids (TSS) daily maximum limit.

b. For discharges composed of surface water or mine water commingled with surface water (Outfall 002 only), *40 CFR Part 434.63* allows alternate effluent limits to be applied when discharges result from specific runoff events, detailed below and in the permit. Utah American Energy has the burden of proof that the described runoff event occurred.

i. For runoff events (rainfall or snowmelt) less than or equal to a 10-year 24-hour precipitation event, settleable solids shall be substituted for TSS and shall be limited to 0.5 milliliters per liter (ml/L) at Outfall 002.

In order to substitute the above limitation, the sample collected during the storm event at Outfall 002 must be analyzed for all permitted parameters specified under *Part I.D.2*. Such analyses shall be conducted on either grab or composite samples.

ii. Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitation instead of the otherwise applicable limitations contained in part I.D.2.

Effluent Characteristics	30 Day Average	Daily Minimum	Daily Maximum
pH, SU	NA	6.5	9.0

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for all permitted parameters under Part I.D.2. Such analyses shall be conducted by either grab or composite samples

The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in Part I.D.3. The alternate limitations in Part I.D.3 shall not apply to treatment systems that treat exclusively underground mine water.

2) TSS 30-day and 7-day averages are based on Utah Secondary Treatment Standards.

3) Daily minimum and daily maximum limitations on pH are derived from Utah Secondary Treatment Standards and Water Quality Standards.

4) Total dissolved solids (TDS) are limited according to Water Quality standards and policies established by the Colorado River Basin Salinity Control Forum (Forum). The water quality standards include a Site Specific Standard which was developed by the Division of

Water Quality for the Price River and tributaries from confluence with Green River to the confluence with Soldier Creek. This Site Specific Standard is a maximum of 3000 mg/L TDS in the Price River. Based on this site specific standard the Lila Canyon Mine can discharge up to, but not to exceed, an effluent concentration of 3000 mg/l TDS.

TDS mass loading is limited according to policies established by the Forum, as authorized in *UAC R317-2-4* to further control salinity in the Utah portion of the Colorado River Basin. On February 28, 1977 the Forum produced the *"Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program"* (Policy), with the most current subsequent triennial revision dated October 2014. In accordance with the Forum and Division of Water Quality standards, the effluent TDS will be limited to a maximum effluent concentration of 3000 mg/L and a discharge of 1.0 ton per day or 366 tons per year. If this tonnage limit cannot be met, the permittee is required to participate in and/or fund a salinity offset project to include the TDS offset credits as appropriate *(See permit provisions for further details)*.

5) Limitations on total iron, total aluminum, dissolved oxygen (DO), Ammonia as N and Selenium are water quality based and derived in the WLA. The iron limitation is based upon the WLA limitation of 1.0 for total recoverable iron.

6) Oil and Grease are limited to 10 mg/L by BPJ, as this is consistent with other industrial facilities statewide.

7) The flow at Outfall 002 is the same as in the previous permit (General Permit for Coal Mining). The flow limit at Outfall 002 is 1.0 Million Gallons per Day (MGD). This Outfall has not discharged since the mine has been permitted. The flow at Outfall 003 will be limited in the permit as a thirty day average of 3.0 MGD.

WASTE LOAD ANALYSIS, ANTIDEGRADATION REVIEW AND REASONABLE POTENTIAL ANALYSIS

Effluent limitations may be derived using a Waste Load Analysis (WLA), which is appended to this statement of basis as Addendum I. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Anti-degradation Reviews (ADR), as appropriate, and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters.

Based on the fact that the Lila Canyon Discharge is a new discharge, a Level II Antidegradation Review was required for this permit renewal. The Level II review was completed and received by the Division of Water Quality on April 05, 2016. The Level II submission received DWQ approval on April 12, 2016 and is attached to this FSSOB as Addendum II.

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following

DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

A quantitative RP analysis was completed for this initial permit on two data sets which were included with the permit application. The two data sets provided information on the existing Lila Canyon Mine discharge, and the second was of the confined Horse Creek Canyon Mine water which will be intercepted during the Lila Canyon Mine expansion. These two separate water sources are not necessarily characteristic of the expected fully mixed final discharge. Therefore, this permit shall require that the permittee obtain additional metals and ammonia data by monitoring on a weekly basis at Outfall 003 for total concentrations of ammonia, selenium, and iron. Quantitative RP analysis performed on ammonia, selenium, TDS, and iron all exhibited Reasonable Potential. Therefore the permit includes effluent limits for these parameters.

EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS

The effluent limitations and monitoring requirements for Outfall 003 shall be completed as outlined below. Effluent self-monitoring requirements are developed in the *Utah Monitoring, Recording and Reporting Frequency Guidelines* as effective December 1, 1991. Reports shall be made via NetDMR or on Discharge Monitoring Report (DMR) forms and are due 28 days after the end of the monitoring period (month, quarter, year, etc.). Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Outfall 002:

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD a/	1.0	NA	[2]NA	Report	Monthly	Continuous Recorder
TSS, mg/L	25	35	NA	70	Monthly	Grab
Ammonia as N	NA	1.4	NA	6.0	Monthly	Grab
Total Iron, mg/L	NA	NA	NA	1.0	Monthly	Grab
Total Selenium, mg/L	0.005	NA	NA	0.020	Monthly	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L c/	Report	NA	NA	3000	Monthly	Grab
TDS, tons/day c/	Report	NA	NA	1.0	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Dissolved Oxygen, mg/L	NA	NA	5.5	NA	Monthly	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual
Visible Oil and Grease, floating solids or foam b/	NA	NA	NA	None	Twice per Month	Visual

Total Arsenic, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Cadmium, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Chromium, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Copper, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Mercury, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Nickel, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Lead, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Silver, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Zinc, mg/L	NA	NA	NA	NA	Monthly e/	Grab
Total Boron, mg/L	NA	NA	NA	NA	Monthly e/	Grab
[1] *MGD: million gallons per day*		[2] *NA : not applicable*		[3] *See Biomonitoring Requirements*		

a/ For intermittent discharges, the duration of the discharge shall also be reported.

b/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least twice per month at 002. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

c/ No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more than 1.0 tons per day as a sum from all discharge points. Upon determination by the Director that the permittee is not able to meet the 500 mg/L 30-day average or the 1.0 tons per day loading limit, the permittee is required to participate in and/or fund a salinity offset project to include the TDS offset credits as appropriate.

The salinity-offset project shall include TDS credits on a ton-for-ton basis for which the permittee is over the TDS loading limit. The tonnage reduction from the offset project must be calculated by a method similar to one used by the NRCS, Colorado River Basin Salinity Control Forum, or other applicable agency.

If the permittee will be participating in the construction and implementation of a new salinity-offset project, then a project description and implementation schedule shall be submitted to the Director at least six (6) months prior to the implementation date of the project, which will then be reviewed for approval. The salinity offset project description and implementation schedule must be approved by the Director and shall be appended to this permit.

If the permittee will be funding any additional salinity-offset projects through third parties, the permittee shall provide satisfactory evidence to the Director that the required funds have been deposited to the third party within six (6) months of project approval by the Director. A monitoring and adjustment plan to track the TDS credits shall continue to be submitted to the Director for each monthly monitoring period during the life of this permit. Any changes

to the monitoring and adjustment plan must be approved by the Director and upon approval shall be appended to this permit.

d/ There shall be no discharge of sanitary waste and visual observations performed at least monthly shall be conducted.

e/ Metals shall be monitored at the first discharge from outfall 002 and monthly thereafter.

Outfall 003:

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD a/	3.0	NA	[2]NA	Report	Monthly	Continuous Recorder
TSS, mg/L	25	35	NA	70	Monthly	Grab
Ammonia as N e/	NA	1.4	NA	6.0	Monthly	Grab
Total Iron, mg/L e/	NA	NA	NA	1.0	Monthly	Grab
Total Selenium, mg/L e/	0.005	NA	NA	0.020	Monthly	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L c/	Report	NA	NA	3000	Monthly	Grab
TDS, tons/day c/	Report	NA	NA	1.0	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Dissolved Oxygen, mg/L	NA	NA	5.5	NA	Monthly	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual
Visible Oil and Grease, floating solids or foam b/	NA	NA	NA	None	Twice Monthly	Visual
Chronic Whole Effluent Toxicity [3]	NA	NA	NA	Pass, IC_{25} > 100% effluent	Quarterly	Composite
Total Arsenic, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Cadmium, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Chromium, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Copper, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Mercury, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Nickel, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Lead, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Silver, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Zinc, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Boron, mg/L	NA	NA	NA	NA	Monthly	Grab

[1] *MGD: million gallons per day* [2] *NA : not applicable* [3] *See Biomonitoring Requirements*

a/ For intermittent discharges, the duration of flow shall also be reported.

b/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least twice per month at outfall 003. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

c/ No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more than 1.0 tons per day as a sum from all discharge points. Upon determination by the Director that the permittee is not able to meet the 500 mg/L 30-day average or the 1.0 tons per day loading limit, the permittee is required to participate in and/or fund a salinity offset project to include the TDS offset credits as appropriate.

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d/ There shall be no discharge of sanitary waste and visual observations performed at least monthly shall be conducted.

e/ Ammonia, iron and selenium shall be monitored ***weekly*** for 10 weeks beginning after the first week of discharge. After which, these pollutants shall be analyzed monthly. The permittee is required to obtain the lowest detection limit possible using standard methods and certified laboratories. Depending on the results of initial expedited analysis, the Division may reassess permit limits for ammonia, iron and selenium.

SIGNIFICANT CHANGES FROM PREVIOUS PERMIT

This permit is the first Coal Mine Individual permit that Utah American Energy has obtained for Lila Canyon Mine. Previously, Lila Canyon Mine was covered under UTG-040024. Further, Lila Canyon does have another separate individual UPDES permit for a sanitary sewage and grey water system, Permit No. UT0026018.

STORM WATER REQUIREMENTS

The storm water requirements are based on the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000. All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Required elements of this plan are:

1) Development of a pollution prevention team,
2) Development of drainage maps and material stockpiles,
3) An inventory of exposed material,
4) Spill reporting and response procedures,
5) A preventative maintenance program,
6) Employee training,
7) Certification that storm water discharges are not mixed with non-storm water discharges,
8) Compliance site evaluations and potential pollutant source identification, and
9) Visual examinations of storm water discharges.

This plan is required to be maintained on-site to reflect current site conditions and made available for review upon request and/or inspections.

PRETREATMENT REQUIREMENTS

This facility does not discharge process wastewater to a sanitary sewer system. Any process wastewater that the facility may discharge to the sanitary sewer, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the state's pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

In accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring (2/1991))*. Authority to require effluent biomonitoring is provided in *UAC R317-8, Utah Pollutant Discharge Elimination System* and *UAC R317-2, Water Quality Standards*.

Data presented by Utah American Energy showed elevated concentrations of metals, specifically Iron and Selenium, which may produce a toxic effluent. This Data is limited in nature and may not completely characterize either sources of water. Because of this, Utah American Energy will conduct chronic whole effluent toxicity (WET) testing quarterly using both test species Ceriodaphnia dubia and Pimephales promelas (fathead minnow) from a composite sample at Outfall 003. Chronic toxicity occurs when the inhibitory concentration to 25% of the population (IC_{25}) is less than or equal to an effluent concentration of 100% as derived from the WLA. The IC_{25} is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female or a 25% reduction in overall growth for the test population. The permit also contains the standard requirements for re-testing upon failure of a WET test, and for a Toxicity Reduction Evaluation (TRE) as appropriate.

A previous laboratory investigation indicated that pH drift during the test caused an artifactual increase in metal concentrations, which resulted in toxicity. According to the method set forth by EPA (*Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013*), it is acceptable to use a carbon dioxide atmosphere to prevent pH drift once it has been demonstrated that pH drift is artificially impacting the toxicity of the sample. As such, the renewal permit will once again allow the use of a carbon dioxide atmosphere in routine testing in conjunction with an unmodified test. The chronic WET testing provisions are detailed further in the permit as well as the toxicity limitation re-opener provision.

PERMIT DURATION

As stated in *UAC R317-8-5.1(1)*, UPDES permits shall be effective for a fixed term not to exceed five (5) years.

Drafted by
Nate Nichols, Discharge
Mike Herkimer, Biomonitoring
Matt Garn, Colorado River Salinity
Mike George, Storm Water
Dave Wham, Wasteload Analysis/ADR II
Ken Hoffman, Reasonable Potential

Utah Division of Water Quality
June 23, 2016

ADDENDUMS

I. Waste Load Analysis
II. Anti-Degradation II Review and Approval
III. RP Analysis and Associated Data

ADDENDUM I

Wasteload Analysis